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RELATING TO

QUADRUPEDS, BIRDS, REPTILES, FISHES, ANNELIDES,
INSECTS, WORMS, ZOOPHYTES, &c.

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Nugæ Helveticæ: Scraps relating to Natural History gathered during a Tour in Switzerland in the Summer of 1855. By
Rev. W. T. BREE, M.A.

"Lend me ten thousand eyes."

Troilus and Cressida.

A NATURALIST touring through the mountain-passes of Switzerland, more especially if it be his first visit to that charming country, seems to stand in need of at least three pairs of eyes,—one to look to his own steps or those of the brute animal on which he may chance to be mounted, a second to view the magnificent and glorious scenery by which he is surrounded, and a third pair to examine the lovely plants and insects which present themselves to his notice at every turn. Now as no man (since the days of Argus) is possessed of more than one pair of eyes, it seems to follow inevitably that one or more of the above objects must be but insufficiently attended to: either the tourist's own steps, the scenery, or the plants and insects, must to a certain extent be neglected. Moreover, there is commonly by far too much of haste and hurry shown in making these mountain excursions; for though they are usually performed at no greater speed scarcely than a foot's pace, yet even that slow progress is far too rapid to allow the tourist time to pause and gaze his full upon the landscape, to catch the insects, and pluck the plants he covets: still less is there time to wander out of the main track, roam about as he would wish to do, and search for them at leisure. The way too, it may be, is long and perhaps hazardous, or the evening may be drawing on, or the weather threatening: any how time presses, and progress *must* be made onwards; so that the tourist is compelled most reluctantly to turn his back upon scenes before he has half contented himself with looking at them. There is on these occasions, if I may speak from my own experience, a sort of painful feeling excited—a feeling, as it were, of being unsatisfied in the very midst of plenty: one is absolutely perplexed and bewildered by the multiplicity of beautiful objects which crowd upon the senses,—rocks and snow-topped mountains, glaciers, lakes, torrents, waterfalls, gorges, ravines, precipices, valleys, pine forests, plants, and insects: who can take in the full enjoyment of such manifold beauty at a gulp? In short the cake, so to speak, is a most rich and excellent cake, but it really is too full of plums and sweetmeats.

One of the things which most forcibly strikes a naturalist in traversing



the Alpine passes (I speak only of what occurred in my own case) is the extreme scarcity, I might almost say the absence, of wild quadrupeds and birds; neither game nor vermin presented themselves to view. In two instances, during the tour, a black squirrel was observed in or near a pine forest; and once while botanising I started a large mouse from under a thick coating of moss. Such was the scanty list of quadrupeds! Our mountain rambles, it ought to be stated, were principally confined, or nearly so, to what I may call the common-place excursions of a Swiss tourist; such *e.g.* as the ascent of the Rigi, the Brunig Pass, the Wengern Alp and Grindelwald down to Meyringen, the pass of the Grimsel, the Simplon, the Tête Noire, the Gemmi, &c., and several excursions around Chamouni, and last, but not least in beauty and interest, those exquisite passes on the Jura range on either side of Moutier: perhaps, therefore, we had no right to calculate upon seeing the chamois, nor still less the marmot, at large and in their native mountains. Accordingly we rested satisfied with viewing these shy animals in a state of confinement. We had, however, flattered ourselves that we were to have seen eagles, kites, and the like, soaring over the mountains, and adding to the savage grandeur of alpine scenery. One small hawk was the only bird we saw of this family. No wild fowl appeared to frequent any of the lakes, with the exception of a solitary wild duck seen on the large dirty-coloured tarn (Dauben See) near the top of the Gemmi: a single kingfisher was observed on the lake of Thun; and now and then, but very rarely, a wheatear, or a yellow wagtail, might be seen in the mountain valleys. On one occasion I remarked a bird which was unknown to me, scarcely so large as a thrush and not unlike in colour;* and once I remember to have observed a chaffinch. But birds of all kinds were so scarce, that whenever one *did* occur it was remarked as something unusual, with the exclamation, "Why, there's a bird!" Towards the higher part of the Gemmi pass a number of large black-coloured birds were observed in the air, which at first we made no doubt were rooks and jackdaws, but on nearer approach their note was found to be quite unlike that of those birds, and different indeed from any that I had ever heard before. Could the species have been the redlegged crow or chough? with whose note I am unacquainted. The water-ouzel, a lover of pure, limpid, rocky rivulets, is a bird of far too refined a taste to frequent the dirty torrents that are met with among the Oberland Alps: I remarked the

* The Alpine Accentor?

absence of the species. These alpine rivers having for the most part their source and origin amid the glaciers, are rendered turbid and filthy by the moraines, and rush down in an impetuous muddy flood, defiling the water throughout its entire course, and in point of colour precisely resembling the contents of a mason's bucket, a circumstance which, while it sadly detracts from the beauty of the landscape, curtails also (as it should seem) the Fauna of the district; for, if I am rightly informed, no trout or other fish, or very few at least, inhabit these impure streams, and the water-ouzel, as already stated, seems to scorn them. The bird, however, is a native of Switzerland; and in the valley, near Moutier, on the Jura, I had the pleasure of seeing it curtsying, as its manner is, on the rocks, and skimming over a deliciously limpid stream sufficiently stocked with trout to excite the spirit of a lover of the angle. I have remarked already on the extreme scarcity of birds throughout the tour: one ornithological treat, however, we had in perfection. While we were standing in the spacious area at the west end of the cathedral, at Berne, for the purpose of viewing the edifice, my eye caught a distant glimpse of a swift, as it rapidly passed behind the roofs of the houses. The bird was out of sight in a moment; nevertheless I felt confident it was a swift, and a fine one too. This was on the 14th of September; and I thought the appearance of a swift so late in the season would cut a figure among the memorabilia to be noted in my 'Naturalists Calendar.' I had not seen a swift since August 10th, at Antwerp, where many were seen in the evening of that day screaming high in the air over the town. On ascending the tower of Berne cathedral in order to get an extensive view of the surrounding country, I observed some twenty or thirty swifts sporting about at a great height above the spire. The man who lives in the tower and shows it to visitors proved to be somewhat of an ornithologist; and perceiving my attention to be greatly attracted by the birds, he immediately cried out "*Cypselus alpinus*,"—words which were soon verified to my entire satisfaction; for presently a swift approached the battlements, and flying within only a few feet immediately over my head entered the interstices of the architectural ornaments of the building, where she had still a brood of young ones, which were heard to chirp merrily to greet the approach of their parent: the visit of the parent bird to the nest was repeated several times while we remained on the tower, and it afforded me a closer and far better view of the bird than I could otherwise have obtained. The alpine swift is a much larger bird than the common one, of a dingy brown colour, and whitish on the breast and belly: in

the shape of the wing and outline of the entire form, as well as in their general manners and evolutions in the air, these birds so exactly correspond with our native species, that but for their superior size—they look almost as big as little hawks—the close view I had of them, and, I may add, the broad hint received from my friend of the tower, I should certainly have passed them by as no other than my old familiar friends and favourites. I did not hear them scream or utter any note, which would have given me much pleasure, if scream they do, as is most probable. In answer to the inquiry, “How late in the season do the swifts remain at Berne?” I was informed that they stay till about the beginning of October, and that they arrive in March or April. I looked out for them near the cathedral on the 16th of September, but could see only two; doubtless the pair which had the brood of nestlings in the tower.

Of the fishes worthy of remark to be met with in Switzerland, I regret to say that I can speak but little, having had no opportunity of seeing them except on table, when of course their interest to the ichthyologist has in a great measure evaporated. On one occasion, at Brienz, we had served up for dinner the celebrated “Lotte,” a very excellent fish when plainly dressed; but in this instance it was so disguised and enveloped in a profusion of thick sauce, (their cookery here is oftentimes abominable), that it was not without difficulty I recognised my old acquaintance the “Barbolt,” as the fish is called in Warwickshire (*Lota vulgaris*). At Geneva we several times met with “Farra,” a rather soft and delicate fish, which I take to be the Gwiniad of Wales, and the “Skelly” of Ullswater and the Lakes (*Coregonus fera*), or some nearly allied species: they were of a fair size, weighing, I should guess, from a pound and a half to two pounds each. Some of our party pronounced them to be by far the best fish we met with during the tour: for myself I should give the preference to the Lotte, always, however, *barring the sauce*. At the same *table d'hôte* one day appeared a large fresh-water trout, of perhaps twelve or fifteen pounds' weight, the produce probably of the adjoining lake: the meat was firm, of a yellowish pink colour, and well flavoured enough, but by no means so good as that of an English trout of a pound weight when in proper season. The pike of the Swiss lakes, so far as I had an opportunity of judging, I did not think excellent of their kind: as might be expected, they grow sometimes to a very large size. At Thun I saw nailed up against the side of a net-maker's house, *in terrorem*, as it were, like vermine on a gamekeeper's wall, the skulls of five or six large pike with their jaws expanded outwards,

making a very formidable appearance. Judging from the dried heads, the fish when alive I should suppose would hardly have weighed less than from twelve to twenty pounds each, or perhaps more. The bleak, or at least a small fish which I could not distinguish from that species, abounded in many of the lakes, and seemed to afford incessant occupation and amusement to the juvenile anglers of the district: the boys, I was informed, were catching "Sardines," which may be the native name for bleak: the true Sardine, it is scarcely necessary to say, is an inhabitant of the salt water. The exquisite brilliancy and vivid colour of the water as it issues out of the lakes of Geneva and Lucerne must be seen to be duly appreciated.

No species of snake or viper was observed during the tour, though very many spots were visited which appeared to be peculiarly well adapted to the harbouring of such reptiles. Lizards (*Lacerta agilis*) were not uncommon.

Though birds, as has been said, seemed scarce in Switzerland, the country is rich in insects. I allude particularly to the diurnal Lepidoptera, and such species as from their nature and habits are obvious, and obtrude themselves on one's notice; for there was no time for seeking after rarities, which might lie hid by day, and required an industrious search for their detection.

Our tour, it should be observed, was not designed to be entomological. If insects *should* present themselves, and now and then be captured, so much the better: they would be (as Dr. South would have said) "*like paper and packthread, all into the bargain.*" But the sight of so many butterflies that one had never seen before, or at least never seen before *alive*, and among them several which are justly considered to be of extreme rarity as natives of Britain, was enough to rouse the spirit of an old fly-catcher who had long since laid aside the net. I had provided myself with no sort of apparatus, either for capturing insects or preserving them when caught, save only a small corked box and a few pins. The only implement I had of the former kind was my hat, and that hat a rather low-crowned, broadish-brimmed, flexible affair, which, I believe, would be called in the vernacular, a "wide-awake," perhaps the most awkward contrivance for the purpose that can be imagined. With this, however, I succeeded after a sort in taking above twenty species of Papilionidæ, which I had never caught before, and now and then contrived to knock down an Apollo as he softly floated through the air (the flight of this insect is something very peculiar) or sat with expanded wings on the blossom of a thistle. Not knowing the specific names of foreign insects, and having

no sufficient book at hand to assist me, I cannot attempt to enumerate the species. Hipparchiæ, Fritillariæ, and Coliades, were among the more prevailing families, especially the former. Vanessa appeared to be far more scarce; V. Antiopa, a rarity now-a-days in Britain, the least so of its genus. But this insect soars about on such a matchless wing as to be no easy capture with a "wide-awake," and though many were seen not more than one specimen fell to my lot. I was particularly struck with the comparative scarcity in Switzerland of some of our most common native species; *e. g.*—I had been in the country, moving about in the brightest and most favourable weather for a whole week or more, before I met with a single specimen of Vanessa Urticæ! Two specimens of V. Polychloros and two of V. C-album were all I saw; only one specimen each of V. Io and Atalanta, and these towards the very end of the tour! The above-named five species, or most of them at least, I should have expected would have been seen almost in swarms. Cynthia Cardui did not present itself, nor Hipparchia Tithonus: and in spite of all the pine woods and shady groves which might seem to afford so suitable a habitat for Hipparchia Egeria, I observed only one single specimen. Hipparchia Megæra was met with very sparingly in one locality only, at Meyringen. In lieu of it, however, an allied species was not uncommon, which one might almost fancy to be a cross (if such things ever happened) between Megæra and Janira; I mean that it partook more or less of the markings and characters of each of these two species, while it was abundantly distinct from either: so beautiful are the varied counter-changes and combinations in the works of Nature! The Hipparchiæ being, *par excellence*, mountain-flies, as such are, of course, particularly liable to encounter all sorts of changes in the weather,—sudden alternations of mist and sunshine: accordingly they know how to "make hay while the sun shines," or, in plain words, to take advantage of the very first ray of sunshine, and come forth and enjoy it. Of this I witnessed, what was to me, a very pleasing instance. While at Chamouni, like most other visitors, we ascended the Flegère, an eminence (as I am informed) of rather more than 7,000 feet above the level of the sea, resorted to on account of the advantageous view it affords of Mont Blanc and its accompanying range of snow-clad peaks. The morning was dull and misty, with a threatening of rain; but they who *should* be best judges of the weather pronounced that the day would be fine; so we started for the Flegère. On arriving at the summit a dense fog prevailed all around; no mountains were visible; indeed there was no seeing many yards before us. The

visitors for the most part retired to the chalet to partake of refreshment, or amuse themselves, as best they might, by looking at the trinkets and curiosities which are there exposed for sale. For my own part I set to work botanising, and thought myself well repaid by finding several plants I had not before met with. After a while the mist began to clear off, and the sun to peep out a little. In a moment the chalet was emptied of its inmates, all rushing forth to view the glories of Mont Blanc "rising in clouded majesty,"—a magnificent scene for the time it lasted, and all the more so, perhaps, because the mountain was only very partially revealed, the fog still obscuring the base and greater portion of the entire range, and thus throwing an air of mysterious sublimity round the whole. But to return to the butterflies, which I may seem to have forgotten. The very first ray of partial and subdued sunshine (for such only it was) which, as I have said, caused the visitors to issue out of the chalet, brought out also on the wing a number of pretty little *Hipparchiæ*, not so large as *H. Tithonus*, with a peculiar iridescent bloom resembling shot silk on the upper surface of the wings. I took several specimens while the sunshine lasted. In about a quarter of an hour the mist returned; the sun was obscured; the curtain dropped upon Mont Blanc; and no more *Hipparchiæ* were to be seen. In the hope of finding them at rest I searched diligently among the short grass and herbage over which they had been flying, but not a single specimen was to be met with: they had made the most of the sunshine while it lasted, and having had their brief enjoyment had retired to rest for the day, secreting themselves beyond the ken of the entomologist. Now it may very naturally be asked, "What is there extraordinary in butterflies flying about when the sun shines, and, like the marigold,* going to bed again when *he* does?" I mention the circumstance as illustrative of the promptness and alacrity with which these little *mountain-flies* availed themselves of the very first and (as it happened) only spurt of sunshine that was to be had that day. It should seem almost as if they had *known*, that for that day at least, it was "now or never" with them; so they lost no time, (as how many more intelligent beings often do!) but wisely seized the first opportunity. I do not recollect to have observed exactly the same species of *Hipparchia* in any other spot.

It may not be out of place here to notice a few of the stations

* "The marigold, that goes to bed with the sun,
And with him rises, weeping."

Winter's Tale.

which appeared to be especially favourable for insects, without meaning, however, to say that others equally good, or perhaps better, may not be met with: I speak only of such as proved productive in my own case. At Meyringen, behind the church and towards the waterfall of Alpbach, there is some excellent ground, and especially in the neighbouring wood, where there is the ruined tower of an ancient castle. The broad tract of denudation caused here by the impetuous floods and torrents which occasionally rush down from the Alpbach, so abounded with a kind of large grasshopper, that it was difficult to set a foot without treading on them; they started up in numbers at every step: they appeared to be of two species, or at least were of two colours, some having the lower wings of a bright red bordered with black, others with the lower wings blue. The first specimen I saw on the wing of the former kind I took at first sight for some species of copper butterfly. These insects were confined, or nearly so, to the above-mentioned barren tract of dried mud and stones, which was entirely devoid of all vegetation, save here and there a small patch of *Saxifraga autumnalis*, *Gypsophila repens*, *Linaria alpina*, or the like, which had cast such firm anchor among the stones as to defy the fury of the floods, or more likely had sprung up from seed since the occurrence of the last deluge from the Alpbach.

Near the chalet, opposite to the Wengern Alp, besides other interesting things, I met with a species of *Mancipium*, allied to *M. Daplidice*, to which I afterwards saw in the museum at Geneva the specific name of "*Callidice*" attached. Close to the upper glacier, at Grindelwald, I captured a bright specimen of *Colias Hyale*. To one like myself, unaccustomed to a glacier country, it seemed strange to find butterflies in immediate juxtaposition with perpetual ice! The steep sunny side of the mountain, as you descend from the Grimsel into the valley of the Rhone, abounded with butterflies,—more than I can enumerate, or had time to catch when on the spot. Here was to be seen *Parnassius Apollo* floating about like a large white feather in a gentle breeze, *Lycæna Virgauriæ*, *Hipparchia Hero*, *Colias* (a pale alpine species) *Hyale* and *Edusa*, and many species of fritillary, and among them one much resembling *Argynnis Aglaia*,* but differing in the under side of the lower wings, which were scarcely metallic, having the silver spots nearly obsolete,—a closely allied, yet distinct species. In this genus, as well as in that of *Melitæa*, it may be remarked that an apparently slight discrepancy, provided only it be

* *A. Niobe*?

of the right sort, is enough to constitute a species. In both there are instances of species unquestionably distinct, which yet so much resemble each other that a common observer might be apt to pass them by as identical. Thus, *e. g.*, we have *A. Adippe* and *Aglaia*, and again *Aglaia* and the species just alluded to. In the genus *Melitæa*, likewise, there is a great resemblance between *Euphrosyne* and *Selene*, and again between *Selene* and *Dia*. On the present occasion, when descending into the valley of the Rhone, I took a *Melitæa* closely approximating to *Euphrosyne*, but nevertheless distinct.

I would strongly recommend an entomologist who may happen to go to Brieg to pay a visit to the low grounds, partly meadow and partly under cultivation, which lie between the town and the Rhone, scarcely a quarter of a mile from the former. In this locality, within twenty yards of each other, and in less than half as many minutes, I took (August 30th) *Argynnis Lathonia* in fine condition, apparently fresh from the chrysalis, and *Papilio Podalirius* a good deal the worse for wear; and likewise tipped the wings of *Mancipium Daplidice*, which, however, escaped me. In the same meadow-ground the botanist, too, may find some things to his liking, such, *e. g.*, as the quaint little orchid, *Herminium monorchis*, and a very slender, delicate species of *Erythræa*, perhaps one of the varieties of *E. pulchella* (*gracilis* of some catalogues), &c., &c. All the way up the Simplon from Brieg butterflies were to be seen in plenty. At the half-way house where horses usually stop to bait I took a very dark, grim-looking variety of *Pontia Napi*, which in the Geneva Museum I found was named "*Bryoniæ*." I doubt its being more than a variety, the alpine phase, as it were, of the species. *Lycæna Virgauriæ* abounded on the flowers of a species of wild mint by the road-side near the inn. Just behind the Hospice on the Simplon lies a tract of ground to the heart's content of either botanist or entomologist. A lovely little gentian (*Gentiana bavarica*) enamelled the surface with its bright deep blue flowers; it so much resembled *G. verna* that at first I took it for that species, blossoming at so late a period of the year for a spring flower (August 29th) in consequence of the altitude of the situation. The alpine anemone made a conspicuous figure, though its blossoms were passed, and it showed nothing but leaves and a large fuzzy head of seed. Here, too, occurred, among other interesting flies, the pale-coloured *Colias* before alluded to, a well-known species, no doubt, to entomologists, but which, for want of knowing its specific name, I distinguish as the alpine *Colias*, for it seemed to be

confined chiefly to the higher mountain regions, in many of which it was far from scarce.

The neighbourhood of Chamouni must not be omitted among the stations rich in Entomology. Near the woody parts of the valley Vanessa Antiopa seemed to be quite at home. On ascending the mountain towards the Chapeau, on the opposite side of the glacier to Montanvert, several species of Hipparchia, some of them more or less approaching to *H. blandina*, appeared in abundance.

Under the head of entomological stations, I will only add, that in the botanical garden at Geneva, on a cloudy day, I took several specimens of *Melitæa Dia* at rest upon the flowers; it seems to be not an uncommon species in Switzerland.

On the Botany of the Alps it is difficult for a lover of plants to speak in measured terms. The Flora is indeed a rich and dainty one. There are so many beautiful and interesting species constantly presenting themselves as new to the British botanist, and so many more quite familiar to him as garden favourites, but looking tenfold more beautiful when seen luxuriating at large and growing as Nature bids them, that the vasculum and the drying-book very soon become most inconveniently crowded with specimens. Speaking of alpine plants in general, I should say there is about them a sort of compactness of character, an elegant terseness (if the expression may be allowed), which, in my eyes, gives a charm to these "miniatures of Nature," beyond even that which is afforded by the more gorgeous splendour of a tropical Flora. The bare foliage of an *alpine* species, to say nothing of the blossom, is oftentimes of exquisite beauty: witness, only as one instance out of many, the foliage of *Soldanella alpina*; and, I may add, that of the entire genus *Saxifraga*, *Androsace*, &c. Even the coarse and robust (Linnæan) genus *Tussilago* has an alpine species of comparatively diminutive stature and of great elegance. Then, again, their style or mode of growth is characterised by neatness. Issuing out of a mere crack on the perpendicular face of a precipice, and forming dense verdant tufts and cushions, or nicely fitted into the exact shape and mould of the nooks and crevices they occupy, they seem, as it were, to be dovetailed into the very rocks they grow on. The sight of these little mountain beauties repeatedly brought to my mind the remark which I well remember to have been made by an old gentleman, long since gone to rest, who in his day used to take great delight in his flower garden: looking at some rather inconspicuous flower (I think it was a species of *Silene*), he would say, "I like the cut of that flower; it smells of the Alps."

All tourists in Switzerland, whether botanists or not, are apt to be taken (as well they may) with the beauty of the gentians, the blossoms of which are, in many instances, so splendid and conspicuous. Some half-score species or thereabouts fell under my observation; among the more interesting were *Gentiana bavarica* (as already stated), *G. asclepiadea*, *G. lutea*, *G. Pneumonanthe*, and *G. ciliata*, the latter adorning with its large light blue flowers the road-side through the pass near Moutier, along with very large specimens of *G. amarella*, the latter in great profusion. Most of the species were in full perfection; but, unfortunately, the queen of the gentians (*G. acaulis*) was passed and gone to seed. It would have gratified me much to have seen this old garden acquaintance in its glory on its native mountains. A blossom so large in proportion to the plant that bears it might seem almost preposterous; but He who formed it knew how to make it at once graceful and magnificent.

The genus *Saxifraga* may be regarded as especially alpine. I met with about sixteen or more species (or varieties), being somewhere about half the number enumerated as natives of Switzerland. What I considered as one of the greatest prizes among them was *S. mutata*, a rare species apparently, but growing not sparingly in a picturesque little gorge about a mile from Thun. I saw it nowhere else. Here it was in full flower on the 13th of September. I gathered a good store of specimens, taking care, however, to leave plenty for the next comer, and, as I trust, for generations to come. That selfish greediness, too common, I fear, in the present day, which would prompt a botanist to exterminate a rare plant from its native locality is much to be reprobated. Let him by all means leave enough to propagate the species, though he himself may never have the chance to visit the spot again. The root of *S. mutata*, unlike that of the allied species, is only biennial, in which respect it stands unique, and affords, I believe, the one solitary instance of the kind throughout the extensive genus to which the plant belongs. Of our British species *S. autumnalis* was the most abundant, occurring profusely and in great vigour in almost every situation suitable to its growth; and near many of the glaciers (as at Grindelwald, *e. g.*, and Rosenlaui) grew the beautiful variety *crocea*, with its rich deep-coloured blossoms. *S. stellaris* I observed in many places, but by no means in such abundance as I have often seen it nearer home. What most surprised me was the non-appearance of *S. Hypnoides*, which so copiously adorns our English, Welch and Scotch mountains. The species, I perceive, *does* find a

place in the Helvetic Flora, as a rather doubtful native;* but nothing that could be mistaken for it, or for any of its countless varieties, presented itself during the course of our Swiss rambles. Nor had it, I may remark, as appeared to me, its exact analogue or corresponding species to take its place in the scale of Nature. I met with no species of Robertsonian Saxifrage (the London pride family), save the small *S. cuneata*, the blossoms of which were over. *S. rotundifolia* was in flower in the Brunig Pass on the 20th of August, and on the Rigi on the 18th; and *S. pyramidalis* at the fall of the Handek on the 27th; *S. aspera* on the Simplon, August 29th; and its smaller compact variety (?) *Bryoides* at the Mer de Glace, September 5th. *S. oppositifolia* occurred in very many places; but in every instance the flowers were gone by. It may seem tedious to be thus minute in assigning dates; but it serves to show the difference which altitude makes in the period of a plant's flowering. Of the four or five last-named species, all but one (*S. oppositifolia*) usually bloom in our English gardens about the month of May.

Let the botanist who has the opportunity not fail to pay a visit to the lower glacier at Grindelwald. Close below the termination of the ice, where the water runs in various shallow channels among the bushes and low shrubs, he will find one of Nature's own botanical gardens, ready made to his hand. That very lovely plant, *Epilobium rosmarinifolium* (of the catalogues), *Saxifraga cæsia*, *S. muscoides*, *S. androsacea*, *S. autumnalis* and its variety, were here in full beauty, August 23, along with perhaps half-a-dozen other Saxifrages, gone to seed, *Androsace lactea*, and many other interesting plants, more than I can enumerate. It struck me as being one of the richest spots for botanising that I ever met with. Nearly the same remark will apply to the vicinity of the glacier at Rosenlaui. I suppose that the seeds of many plants, or perhaps the plants themselves, may from time to time be washed down from above by the waters that issue from the glacier, and that they take root and vegetate as soon as they are clear of the ice. And this may be the reason why the immediate vicinity below a glacier exhibits so large an assemblage of plants, some of which usually and legitimately belong to still more elevated zones.

Parnassia palustris grows almost everywhere in Switzerland, not

* It is inserted both by M. Schleicher and M. Thomas in their Catalogues of Swiss plants; but M. Gaudin, probably a far better authority, though he introduces the plant into his '*Flora Helvetica*,' remarks, "*Species formosa nusquam in Helvetia occurrere videtur.*"—*Synopsis Floræ Helveticae.*

only, as with us, on moist boggy places, but I observed it also on dry slopes. Sometimes the blossoms were as large as a shilling.

Near the hospice or inn at the top of the Grimsel, among

“The living flowers that skirt the eternal frost,”

was to be seen *Soldanella alpina* blossoming close to the very edge of the snow, and even under the snow itself. The plant occupied the entire surface for a considerable space, itself forming, as it were, the turf. Hard by was a handsome species of *Pedicularis* (*P. recutita*, I believe), which I did not observe elsewhere. *Viola biflora* was scattered about in abundance, and enlivened the scene with its merry yellow flowers, as did the snow-white blossoms of *Ranunculus aconitifolius*. The double variety of this last plant has from my earliest recollection been a common ornament of our gardens, under the name of “Fair maids of France;” but I never could meet with the single in any nursery or collection, and have often asked for it in vain. Why it should not find a place in the parterre I am at a loss to understand, as it strikes me as being a very elegant plant, quite as well worthy of our notice as the double variety, and most probably of no less easy culture. I cannot admit the justness of Mr. Curtis’s remark on this subject in one of the earlier volumes of the ‘*Botanical Magazine*,’ where he says:—“This is one of those plants which derives its beauty from the multiplication of its petals; *in its single state no one would think it deserving of culture as an ornamental plant*; when double, few plants come in for a greater share of admiration.” Who would have thought that such a remark could have fallen from a botanist! I can scarcely think that any one who had once seen this *Ranunculus* in bloom upon the mountains could so malign its character. It was one of the plants I had long craved to see alive, and which, accordingly, gave me especial pleasure to behold. The truly elegant and unassuming plant, *Astrantia minor*, I had been told and taught to believe was a rare species even on the Alps; accordingly, the first specimen I met with I looked upon as somewhat of a trump, but soon found that few plants are more common: it grows all about the Grimsel pass, and in many other places. *A. major*, a far more common plant in the gardens, I did not chance to meet with.

In such elevated situations as the Alps many of our early spring-blooming plants, like the Saxifrages already alluded to, do not come into flower till late in the summer; thus, *Cardamine pratensis* and *Caltha palustris* were to be seen in full beauty towards the top of the

Grimsel on the 27th of August, and the former plant scarcely in perfection on the Wengern Alp on the 23rd.

Arnica montana, a bold, handsome plant of its family, which for its excellent medicinal properties obtained, among the old practitioners, the title of "*Panacea lapsorum*," occurred in various places, as on the Rigi, the Grimsel pass, the Wengern Alp, &c. Printed handbills advertising the medicine (which is in truth not only a popular, but a very efficacious remedy in the case of hurts and bruises) lay about in conspicuous places in the hotel at Chamouni for the information of visitors. The tincture, I am informed, is prepared from the *leaves*, and therefore need not involve the destruction of the plant; had it done so, the species, I think, must soon have been exterminated from the mountains; for, though it grew, as I have said, in very many places, it did not appear to be very abundant in any; and I am not aware that the plant is ever cultivated for the sake of its medicinal uses.

Switzerland seems to be a country peculiarly favourable to the fruiting of its native berry-bearing shrubs. The scarlet elder (*Sambucus racemosa*), *e. g.*, which, under the influence of an English climate, I believe, not seldom fails to mature its fruit, makes, in many of the Swiss valleys, a most showy and beautiful appearance, with its bright scarlet berries hanging in numerous bunches. For what useful purpose the berries are employed I was unable to learn, but observed that they are gathered and collected for *some* use, and that not as an article of food. On the Tête Noire, *Vaccinium Vitis-Idæa* produced unusually large clusters of berries, and these in such abundance that it would have been easy to have gathered an ample supply for culinary purposes in a very short space of time, and without moving many yards from one spot. And it is no bad tart, I may observe, that may be made of these berries, much inferior as they are to those of the cranberry (*Oxycoccus palustris*), for which they are sometimes put off and sold to such as know not how to distinguish them from the genuine fruit.

Again, to take another instance, *Hippophae Rhamnoides* in several places I observed to be almost smothered with its own fruit, the twigs and branches of the shrub being entirely enveloped, for the length of six or more inches, within a closely compacted mass of lurid orange-coloured berries, of a rather forbidding aspect, somehow involuntarily reminding one of physic. Whatever their actual properties may be, they *look* cathartic, if not downright poisonous. Linnæus, however, in his '*Flora Lapponica*' and '*Flora Suecica*,' describes the berries

as being very acid, and of a sharp vinous flavour; and (if I rightly understand him) tells us that the fishermen on the Gulf of Bothnia make a sort of preserve (Rob) of them, which imparts a most agreeable flavour to fresh fish.*

A writer in the September number of the 'Phytologist' (p. 97), speaking of the barberry (*Berberis vulgaris*) and *Epimedium alpinum* as the only British representatives of the order Berberidaceæ, says that "the influence of these plants on the general aspect of the country is most inconsiderable, and neither of them would be missed were they to disappear, except by the botanist and the nurseryman." This remark may be just and true enough as applied to Britain, because with us these plants are comparatively rare, except in cultivation; but (I am now speaking only of the barberry) not so as regards Switzerland, in certain districts of which the shrub greatly abounds; for instance, in some parts of the journey from Martigny to the Baths of Leuk whole tracts of barberry were to be seen loaded with scarlet fruit (there should seem to be no blackbirds and thrushes to devour the berries); and, the foliage having now (September 11) assumed a bright autumnal tint, the bushes looked almost as if they were on fire, and added a more marked and glowing feature to the landscape than a whole common of gorse in full flower does in England, being conspicuous at a distance, even on the slopes of the opposite side of the valley.

Being on the subject of the berry-bearing shrubs of the country, I may mention that in the street at Thun (September 14) I met a countrywoman carrying a basket of *red* currants, the produce, no doubt, of some garden, which struck me as being by far the largest I ever saw: the berries were quite equal in size to those of the finest *white* currants. I should have liked to have introduced the sort into England, though possibly it would have degenerated in our climate.

In general the cultivated fruits we met with in Switzerland (I speak of apples, pears and plums) were, I think I may say, about the worst of their kind that it is well possible to conceive, not many degrees removed from their aboriginal wild parents.

Few plants in Switzerland engage the attention of strangers more than does *Rhododendron ferrugineum*, or "the rock-rose," as it is

* "Baccæ sapore austero-vinoso gaudent, hinc conficiunt Piscatores sinum Bothnicum incolentes ex eis Rob, quod piscibus recentibus additum, iis gratissimum conciliat saporem."—*Flora Lapponica*.

"Baccæ acidissimæ pro embemmate piscatorum Alandiæ; Tingunt luteo colore." *Flora Suecica*.

vulgarly called. When growing, as it often does, in extensive masses, its dark rose-coloured blossoms afford indeed a splendid sight. Not a tourist scarcely, young or old, male or female, ascends the Rigi or other like mountain without coming down with his hat, cap, or bonnet (as the case may be), and the head of his alpenstock adorned with sprigs of this beautiful shrub, as a trophy in token, as it were, of the feat which has been accomplished. On the Gemmi I observed a large tract of the *Rhododendron* bearing pale pink or flesh-coloured flowers, of exquisite delicacy. A pure white-flowered variety, also, is sometimes met with, as I gather from dried specimens of it which I have seen.

The prevailing kind of alder among the Alps is quite a distinct species from the common *Alnus glutinosa*; the leaves are much smaller, sharp-pointed, doubly serrated, and downy, especially on the under side; the bark is of a gray colour; it is, I believe, *Alnus incana*. A light, airy tree, as compared with the lowland species, it does not form those dense masses of dark foliage, second only to the oak in beauty, which are so characteristic of its more common ally; and by consequence, though an elegant tree, is much less picturesque. Different, however, as the alpine alder is, whether viewed in a general way as an entire tree, or more closely examined in detail, it does not make so great a difference to the landscape as might have been expected; and I suppose that nineteen tourists out of twenty, unless they have a botanical turn, pass it by without being aware of the discrepancy. My fellow-travellers did not notice it until their attention was called to the subject.

It has often been remarked, and the fact, I believe, is brought home to the experience of all Swiss tourists, that in no point is the untutored eye more apt to be deceived than in its calculation of distance and of size. Amid the vastness of the surrounding scenery, large objects appear to be small, and distant ones to be near. A mountain or a glacier, for instance, which seems to be almost within a stone's cast of the spectator, is miles off! The pine forest which skirts the base of yonder mountain, on the opposite side of the valley, looks no better than an asparagus bed in summer trim; but approach it, enter into it, and behold!

“Insuperable height of loftiest shade.”

These pine forests decidedly take rank among the *fine things* of Switzerland; their solemnity and deep gloom; the profound stillness

which pervades them, interrupted only by the murmur of some distant waterfall or torrent, or the occasional roar of an avalanche; the blasted trunks and limbs of the pines, and their dry, shrivelled branches dangling with long beards of gray lichen; the golden carpet of moss spread beneath, embroidered with the delicate fronds of ferns; and, above all, the loftiness of the individual trees;—these and the like are the component elements of their grandeur. I dare not trust myself in an attempt to state precisely the height to which the pine trees attain. M. Gaudin, under the head of *Pinus Abies*, justly says, “*arbor excelcissima, trunco longissimo*,” the loftiest of trees, with the longest trunk. Heretofore the thought had repeatedly struck me, when looking at pictures and views of alpine scenery, that the pine trees therein depicted were unnatural, exaggerated representations, and portrayed as out of all proportion too tall, and especially as compared with their horizontal dimensions. But one lives to learn; and I now find that what I had presumed to criticise as faulty are faithful delineations of nature and strictly accurate. Even when standing singly, the Swiss pine does not seem disposed to spread its branches to any very great extent horizontally, but shoots up in a narrow cone, like the church steeple, which it often exceeds in height. As nothing like artificial pruning, or weeding out of some for the sake of the remainder, seems to be practised in the Swiss forests, the trees are left to grow at random, just as Nature had scattered the seed; and so thick do they stand sometimes, and crowded together, that it is still a marvel to me how they should attain the size they often do, and not rather starve and choke each other. Certain it is that, were our larch and fir plantations to be left without thinning out from time to time, and allowed to stand so thick, the trees would soon come to nothing, and would smother and kill one another in less than fifteen or twenty years.

They have a practice in Switzerland of sometimes felling the fir trees, not, as is usual, at the very base of the trunk, but at two or three or even five or six or more feet *above* the surface of the ground, and consequently leaving a set of most unsightly stumps of the above dimensions to rot on the ground at leisure. This should appear to be a most wanton waste of just so many feet of the best of the timber. Why the method should be adopted I have failed to ascertain, unless it be (as I have heard it suggested in explanation) that the trees have been felled during a deep snow, when it would be impossible to get at the base of the tree near the surface, and so there was no help for it; but, if such be the case, why not wait awhile, and defer the felling

till the snow is gone? It has been suggested, again, that these stumps may have been left by way of defence and security, with a view to arrest the onslaught of an avalanche.

No mention has yet been made of the magnificent walnut trees with which, in many parts, the country abounds, as at Interlachen, *e. g.*, and other places, and which, on account of their size, age, and highly picturesque character, might well demand more than a passing note of admiration. But the length to which the above rambling remarks have already extended reminds me that it is time to draw them to a close; but, before I do so, a word or two must yet be added on the subject of ferns. It would be no better than a simple truism to say that ferns abound in Switzerland, and adorn and beautify the rocks and ravines, go wherever you will: that is most true. Nevertheless, I do not hesitate to confess that in this particular department of Botany I was greatly disappointed: I mean that I had expected to have found both *more* species, and several of greater rarity. With the single exception of *Cystopteris montana*, I met with no fern that was new to me, I mean that I had not previously seen and gathered in a wild state; and, with the further exception of *Asplenium septentrionale*, none that I had not repeatedly found in Britain. The last-named species grew sparingly near Chamouni, on rocks by the path, as you begin to ascend to Montanvert. Afterwards, in making the Tête Noire pass, the chinks of the stone walls on either side of the road were seen absolutely infested with the fern: it grew in such abundance one might have thought that in constructing the walls the plant had been employed instead of mortar to cement the stones together. This occurred near Argentiere, the place where the passports are submitted to the Sardinian authorities. *Cystopteris montana* I found in two spots only, though I was on the look-out, and searched for it diligently in other likely places. At Rosenlauri, between the glacier and the inn, it grew in a little rocky recess or *cupboard*, in shape and size not much unlike a small oven open on the side—a most snug birth—of which it seemed to be the sole proprietor, occupying the entire area or floor of the cupboard, which consisted of wet black soil. The fronds, both fertile and barren, were here of a rather diminutive size. On the Gemmi the *Cystopteris* was met with in far greater abundance, and with much larger fronds, springing up amid a sloping heap of bare loose stones, just as *Polypodium calcareum* is seen to do in Yorkshire, Derbyshire, &c.; but here too, as at Rosenlauri, it seemed to be confined to one place only, close to the side of the horse-path, near the bottom of the mountain as you descend towards Kan-

dersteg. A more leisurely search, had circumstances permitted it, might very probably have been rewarded by the discovery of the fern in other parts of this fine and most interesting mountain. But the excursion over the Gemmi from the Baths of Leuk was, in point of weather, most unpropitious: a mist to begin with, increasing into so dense a fog that we might almost be said to have made this magnificent pass without *seeing* it: then set in a steady rain, and, what was nearly as disagreeable, the length and difficulty of the journey, coupled with the conveyance of the baggage, rendered it almost imperative to have recourse to a horse to ride on, a most sore encumbrance on such occasions to a botanist, who wants, of course, to dismount every ten or twenty yards to snatch some charming plant that is quite irresistible. Now mounting and dismounting from the back of a horse, equipped in alpine guise, is no such easy matter, and becomes not a little irksome if the operation has to be often repeated, as will readily be understood when it is stated that the high pommel of the saddle in front reaches almost to your breast-bone, and behind you is strapped a large sack of hay projecting a foot, or more, on either side, and surmounted by your own carpet-bag, &c., so that you sit, as it were, engulfed within the saddle, from which it is not easy to disengage yourself, or to regain your seat when required: I wished my brute far away a hundred times; and now and then, in order to avoid temptation, actually turned away or closed my eyes against the beautiful plants that strewed the ground on every side. In making mountain excursions, let the botanist *eschew a horse*, whenever it is practicable to dispense with the encumbrance.

As in the case of certain insects already noticed, so with the ferns, some of our less uncommon British species appeared to be comparatively rare in Switzerland, as *e.g.*, *Asplenium Adiantum-nigrum* (of which I do not recollect to have observed more than a single specimen, and that a weak one), *Scolopendrium vulgare*, *Polystichum lobatum*, *aculeatum*, and *angulare*; and to these I think I might add *Lastræa oreopteris* (which, however, occurred in some abundance on the Rigi), and *Blechnum boreale*. Others again, to my surprise, I missed entirely, as *Osmunda regalis*, *Ceterach officinarum*, *Adiantum Capillus-Veneris*, *Lastræa fœnisecii* and *rigida*, *Asplenium lanceolatum*, and both the British species of *Hymenophyllum*, and, above all, what I had most confidently promised myself a sight of, *Asplenium fontanum*. Had it not been for the kindness of M. Gutherick, of Berne, I should have left the country without a specimen of this interesting fern. To that gentleman I am indebted for fronds, as well

as for a liberal supply of other alpine plants, for which my best acknowledgments and thanks are due. When I speak of the scarcity or the absence of certain species, again let it be borne in mind that my rambles were principally confined to the ordinary Swiss excursions; so that it is more than probable that the localities richest in botany might not have been visited. My remarks, throughout, relate only to what fell under my own experience. Speaking generally, I should not say that, on the whole, ferns in Switzerland attain a larger size, or more luxuriant growth, than they commonly do with us, and in some instances perhaps scarcely so much so. These are, however, exceptions. *Polypodium calcareum*, for instance, (call it *P. "Robertianum,"* if any prefer that name), sometimes exhibited gigantic fronds which quite surprised me, in size almost competing with an ordinary frond of *Pteris aquilina*! *Cystopteris fragilis*, again, and *Allosorus crispus*, were in some places extraordinary large and fine; and on the old bridge, at Berne, *Asplenium Ruta-muraria* grew in broad dense masses, a yard or more in diameter. I had fancied to myself that I had many a time seen *Polypodium Dryopteris* and *Phegopteris* at their best estate and highest perfection in various parts of Yorkshire, Cumberland, Wales, &c.; but in this I was mistaken. On leaving the chalet, or inn, which stands at the top of the Tête Noire, the road towards Martigny soon leads through a pine wood, in which these ferns struck me as displaying a grace and elegance of which I had never seen the like before. Under the gloomy shade of the pines the delicate fronds were scattered about over a surface of rich golden moss, with but little or no interruption from grosser vegetation. The spot seemed made on purpose to display their charms. To a lover of ferns it was an exquisite sight, which I shall not readily forget; and I felt inclined to exclaim with Henry, on sight of Anne Bullen—

"O beauty,
Till now I never knew thee."

Asplenium viride, a local, if not a rare species in England, but where it is found growing in great abundance, was very plentiful in Switzerland, more so even than its (with us) more common ally *A. Trichomanes*.

In closing these remarks, I wish it to be understood that a few plants only out of numbers have been spoken of, and selected for more marked and particular observation. Scores of highly interesting

species have, of necessity, been wholly passed by in silence, belonging respectively to such genera, among others, as the following, viz. :—

Achillea	Cyclamen	Potentilla
Aconitum	Dianthus	Prenanthes
Alchemilla	Digitalis	Primula
Allium	Draba	Prunella
Anthericum	Dryas	Pyrola
Apargia	Erica	Rumex
Arabis	Erigeron	Salvia
Arbutus	Erinus	Salix
arenaria	Euphrasia	Sedum
Artemisia	Genista	Sempervivum
Asclepias	Geranium	Senecio
Aster	Geum	Silene
Astragalus	Globularia	Spiræa
Azalea	Gnaphalium	Tamarix
Bupleurum	Helleborus	Thalictrum
Bupthalmum	Hieracium	Thesium
Cacalia	Hutchinsia	Thlaspi
Campanula	Lactuca	Trifolium
Carduus	Luzula	Veratrum
Carex	Mœhringia	Verbascum
Centaurea	Myosotis	Veronica
Cerastium	Phyteuma	Vicia
Convallaria	Pinguicula	

But to speak of all these would far exceed my limits, and I must forbear. The bare mention, however, of the above names serves to recal many a lovely scene and pleasurable excursion : pictures, as it were, and images of beauty are called up, and vividly impressed upon the mind, never to be erased. To a naturalist, a lover of the picturesque or of sublime mountain scenery, Switzerland is indeed a delightful country. For my own part, I may say that I turned away from it with feelings of reluctance and regret, and have been

“ever since a fresh admirer
Of what I saw there.”

King Henry VIII.

W. T. BREE.

Entomological Botany (with more especial reference to the Plants frequented by the Tineina). By H. T. STAINTON, Esq.

(Continued from page 5139).

Cratægus Oxyacantha (continued).

Lyonetia Clerckella is also a denizen of the hawthorn-leaves in the larva state; it forms long slender galleries, far longer than those formed by any Nepticula of our acquaintance; moreover the caterpillar itself, unusually long, is seen, when the leaf is held up to the light, to be furnished with the six horny legs, which at once shows it is no Nepticula you have in view. Cemiostoma scitella is a striking exemplification of the effects that may be produced by small and apparently insignificant causes: the moth—splendid little gem as it is—is seldom seen, nor is the larva itself any more generally known, but the larva mines, and its mines are brown: it is most busy in August. Hawthorn hedges are not naturally brown in August, but where Scitella abounds, the larva of that insect turns the hawthorn hedges brown. This is no exaggeration: the mine of each larva, it is true, is less than a sixpence, but three or four in one leaf is nothing unusual, and, where they do abound, to find an untouched leaf is not a common occurrence; hence the general aspect of the hedge, as we look along it, is brown or brownish, and this caused by the caterpillar of a moth so small that incipients wonder if it is possible to pin it.

Wonders thicken upon us as we approach the end of our list of hawthorn-feeders, for now we come to the consideration of Bucculatrix Cratægi: this larva may be found in August; it at first makes a very slender minute mine, in the form of a contorted gallery; but whereas in early life it thus eats only the parenchyma of the hawthorn leaf, it after a time ceases to eat such baby-food: it quits the mine—"the home where its childhood dwelt," it crawls along the under side of the leaf to a convenient nook, spins there a flat covering of silk, under which it lies concealed, like a good economist, "making both ends meet," till it has attained a very different appearance from that of its early days; it is now a gaily marked and highly ornamental little larva (as Professor Frey observes, the genus Bucculatrix contains the smallest external feeding larvæ we know), and from this time forward it ceases to seek any concealment, but feeds quietly on the upper or

under side of the leaf, eating the leaf half through: it now eats the epidermis; whether this merely implies that its digestive organs are stronger, or whether there is some chemical difference between the parenchyma and epidermis of a hawthorn-leaf, and whether the change that has taken place in the habits of the larva renders this change in its food necessary, I do not propose to discuss, but it would form an interesting chapter for some future Professor Johnstone to introduce into 'The Chemistry of the Common Life of a Bucculatrix larva.'

The genus *Nepticula* is well represented among the hawthorn-feeders: a green larva, a yellow larva and a yellowish larva are already known and distinguished by us, producing respectively *Oxycanthella*, *Pygmælla* and *Ignobilella*; and one or two other larvæ, not yet sufficiently learned, such as *Gratiosella* and *Regiella*. Of the last-named species I have a single specimen, taken at Dartford Heath, on the fence, in June, 1852.

Pyrus communis. Pear.

Pyrus Malus. Apple.

Speyer enumerates certain species as feeding both on apple and pear, then others which feed only on pear, and some which feed only on apple.

The species he gives as common to both plants are *Papilio Podalirius*, *Aporia Cratægi*, *Vanessa Polychloros* (can any one confirm the fact of this feeding on fruit trees? Mr. Foxcroft says he finds the larva on elder, but these he reputes to produce a distinct species), *Smerinthus ocellatus*, *Zeuzera Æsculi*, *Diloba cæruleocephala*, *Psilura monacha*, *Hypogymna dispar*, *Porthesia auriflua* and *P. chrysorrhæa*, *Gastropacha quercifolia*, *Clisiocampa neustria*, *Acronycta tridens* and *A. psi*, *Mamestra pisi*, *Orthosia stabilis* and *O. instabilis*, *Rumia cratægata*, *Ennomos alniaria*, *Alcis rhomboidaria*, *Amphidasis pomonaria*, *Hibernia defoliaria*, *Cheimatobia brumata*, *Nola cucullatella*, *Peronea Abilgaardana*, *Penthina variegana*, *Carpocapsa pomonella*, *Exapate gelatella*, *Cerostoma asperella* and *Swammerdamia Pyrella*.

It will be observed that all the above, excepting the far-famed *Podalirius* and *Nyssia pomonaria* are known as British species; *N. pomonaria* is a species far more likely to occur here than *P. Podalirius*.

Speyer cites as feeding on pear (and not on apple), *Gastropacha Pruni*, *Eriogaster everia*, *Cosmia pyralina*, *Dasycampa rubiginea*,

Scopelosoma satellitia, *Crocallis elniguaris*, *Amphidasis pilosaria*, *Ourapteryx sambucaria* and *Scythropia cratægella*, and he gives the following as feeding on the apple (not on pear), *Miselia Oxyacanthæ*, *Euthalia psittacata*, *Eupithecia rectangulata*, *Simaethis pariana*, *Hyponomeuta Malinellus* and *Gelechia rhombella*.

The *Hyponomeuta Malinellus*, which we have not yet found here, is an insect as white as *Evonymellus*, a character which none of our apple-bred specimens possess. Or do our specimens merely show an insular variation from the continental type? The point is worthy of consideration. Certainly with us what we repute *H. Padellus* feeds with great indifference on apple, pear, plum, &c. *Cerostoma scabrella* is also an apple-feeding species which Speyer has omitted to mention, but unfortunately I can say little about it, never having made its personal acquaintance. The *Phibalocera Quercana* may often be found under its slight web, on the under side of apple-leaves. The larva of *Gelechia alacella*, though not strictly speaking (as far as we at present know) either an apple- or pear-feeder, patronises those trees, feeding on the lichens growing on the stems. *G. Rhombella*, Speyer has duly noticed; *G. leucatella* is also an apple-feeding species, and *G. nanella* loves to feed in the flowers of pears, forming little galleries among the stamens, and uniting them with the pistil in a mode not strictly botanical. *Argyresthia curvella* feeds certainly in the leaf-buds of the apple and pear, though up to the present time I have never met with it. *Ornix guttea* feeds on the leaves of the apple, turning down a large piece, and eating the parenchyma from within, just as the better-known *O. Avellanella* does on the leaves of the hazel. *Coleophora paripennella* appearing quite omnivorous, of course eats apple; *C. anatipennella* is also sometimes found on apple, but *C. hemerobiella* is very constant in its attention to pear-tree; and as it and *C. nigricella* are often found in company, the latter is often assumed to be the juvenile form of *C. Hemerobiella*. *C. siccifolia* is sometimes to be found on apple-trees, though it seems more partial to hawthorn.

The next and perhaps the most important thing we have to mention is the black variety of *Laverna atra*, of which the larva feeds in winter and early spring in the buds of the bearing spur of the apple. Entomologists who have access to orchards would do well to look after this destructive, yet in-most-cabinets-desiderated insect.

Of the genus *Lithocolletis* there is the under-side-feeding *Pomifoliella* and the upper-side-feeding *Corylifoliella*. *Lyonetia Clerckella*

mines freely in apple-trees, and *Cemiosstoma scitella* is also at times pretty abundant.

In the genus *Nepticula* two of the hawthorn-feeding species *Oxy-canthella* and *Pygmælla* feed also on apple, and a hawthorn larva, which is still undetermined, has likewise been found in apple leaves. But the apple produces, in addition, species of its own: there is the yellow larva of *Malella*, making long wavy galleries, and there is a yellow larva which makes blotches, and from which I am now half inclined to suspect we shall eventually rear *Trifurcula pulverosella*. Then, among Frey's new species, is one apple-feeder, *Desperatella*, of which the green larva makes closely-contorted galleries, often occurring in such numbers that the leaves appear entirely yellow; it occurs in October only on young bushes: another recently new species is *Minusculella*, of which the green larva mines, in August, the leaves of pear-trees (both wild and cultivated); the mine much resembles that of *Ignobilella*, the excrement, at first linear, being entirely black; the colour of the larva readily distinguishes it. The two last-named species have not yet been found here.

H. T. STANTON.

Mountsfield, Lewisham,
August, 1856.

PROCEEDINGS OF SOCIETIES.

ENTOMOLOGICAL SOCIETY.

July 7, 1856.—Special General Meeting.—W. WILSON SAUNDERS, Esq., President, in the chair.

The meeting was made special pursuant to notice for the election of a Secretary and one member of Council, in consequence of the resignations of Messrs. Douglas and Pascoe.

Mr. E. W. Janson was elected to both offices.

Dr. J. E. Gray moved a vote of thanks to Mr. Douglas, the retiring Secretary, whose able discharge of the duties, during the seven years he had filled the office, he was sure every one would acknowledge.

The motion was seconded by Mr. Westwood, and carried unanimously.

Ordinary General Meeting.—The minutes of the last meeting having been read and confirmed,

Mr. Douglas feared he was rather out of order in rising at that time to address the meeting; but the cause of his doing so was not an ordinary one. On the occasion of the Society's excursion to Reigate, on the 21st ult., the members had been most hospitably entertained by the President at the 'Swan' hotel. He much regretted that

business engagements had prevented him from being present; but had heard from more fortunate persons that they never spent a more pleasant day. He thought, therefore, the present was a fitting opportunity for proposing a vote of thanks to the President for his liberality on this and all other occasions.

Dr. Gray, as one of those present on the occasion alluded to, most cordially seconded this motion, which was submitted to the meeting by Mr. Douglas, and carried by acclamation.

Donations.

The following donations were announced, and thanks ordered to be given to the donors:—‘Die im Bernstein befindlichen organischen Reste der Vorwelt gesammelt in Verbindung mit Mehreren bearbeitet und herausgegeben von Dr. Georg Carl Berendt, Erster Band, Erste & Zweite Abtheilungen, Zweiter Band, Erste Abtheilung;’ presented by Madame Berendt. ‘Abhandlungen der Mathemat. Physikalischen Classe der Koeniglich Bayerischen Akademie der Wissenschaften,’ Vol. xvii. Part 3; ‘Dr. F. B. W. von Hermann, Ueber die Gliederung der Bevölkerung des Königreichs Bayern;’ ‘Denkrede auf die Akademiker Dr. Thaddäus Siber und Dr. Georg Simon Ohm;’ ‘Almanach der Königlich Bayerischen Akademie der Wissenschaften für das Jahr, 1855;’ presented by the Royal Bavarian Academy of Sciences. Hewitson’s ‘Exotic Butterflies,’ Part 19; by W. W. Saunders, Esq. ‘Journal of the Proceedings of the Linnean Society,’ No. 2; by the Society. ‘Jubilé Semi-Seculaire de la Société Imperiale des Naturalistes de Moscou le 28 Decembre, 1855;’ by the Society. ‘Généra des Coléoptères,’ Tome iii.; by the Author, M. Th. Lacordaire. ‘Revue et Magasin de Zoologie,’ 1856, No. 5; by the Editor, Monsieur F. E. Guérin-Méneville. The ‘Zoologist’ for July; by the Editor. The ‘Journal of the Society of Arts’ for June; by the Society. The ‘Literary Gazette’ for June; by the Editor. The ‘Athenæum’ for June; by the Editor. ‘A Catalogue of British Ichneumonidæ in the Collection of the British Museum,’ by Thomas Desvignes; by the Author. ‘A Manual of British Butterflies and Moths,’ No. 5; by the Author, H. T. Stainton, Esq. The ‘Entomologist’s Weekly Intelligencer,’ Nos. 10—14; by the Editor. ‘Entomologische Zeitung,’ 1856, Nos. 5 and 6; by the Entomological Society of Stettin. An engraving on steel of *Lithocolletis tenella*; by Edward Robinson, Esq.

Mr. Westwood read a translation of Madame Berendt’s letter accompanying the donation of her late husband’s ‘Organischen Reste in Bernstein,’ which stated that on the completion of the work it is her intention to dispose of the cabinet left by Dr. Berendt at his decease, in which the greater part of the original specimens figured and described in the work are contained. He observed that such a collection was extremely interesting, from the fact that while in very few instances fossil insects could be decyphered in all their parts so as satisfactorily to determine their structure and relations, these amber insects, being enclosed in a transparent substance, are quite visible and easily examined. Supposing the collection to have been formed from specimens of amber collected on the shores of the Baltic (the chief source of supply for this material), it would show that the climate of Prussia had undergone many changes; for it contained a great number of forms quite analogous or even identical with existing European groups, intermingled with others of a tropical character, and others, again, quite distinct, especially among the Neuroptera, where so many gaps in the natural series exist in the known forms. The volume published contained the plants, Aptera of Linnæus, Hemiptera and Neuroptera, the latter very carefully worked out

by Dr. Hagen; the Coleoptera, Lepidoptera, Hymenoptera and Diptera remaining to be treated upon in the fourth volume, now in course of publication. As the collection was eventually intended for sale, he trusted that it would be secured for the British Museum, and supposed it would be regarded as an appendage to the zoological rather than to the palæontological collection.

Dr. Gray did not wish to detract from the merit of the elaborate work on the table, but considered great caution was necessary in the investigation of these organic remains in amber, as a large portion of the article sold for Baltic amber was in fact gum animé, and brought from Africa; and instanced many frauds practised by dealers in specimens on the Continent. He imagined there could be no doubt that a collection of this kind was a zoological one, and not palæontological.

Election of a Member.

The Rev. G. W. Braikenridge, of Broomvill House, Brislington, near Bristol, was balloted for and elected a Member of the Society.

Exhibitions.

Mr. Douglas exhibited bred specimens of *Lamprosetia Verhuellevella* and *Bucculatrix maritima*, from Mr. Hemmings, of Brighton; also specimens of *Laverna Raschkiella* and *L. conturbatella*, two species of *Tineæ*, hitherto unrecorded as British, both taken at Box Hill, by Mr. F. O. Standish.

Mr. Foxcroft sent for exhibition some Coleoptera taken in Perthshire, including a single example of *Dendrophagus crenatus*, *Payk.*; and some living specimens of *Chrysomela cerealis* from Wales.

The President observed that *C. cerealis* appeared to be plentiful in Wales this season. Mr. Brewer had shown him a great number recently taken there.

Mr. Stevens exhibited a living specimen of *Lebia crux-minor*, taken by himself near Brighton; *Adgestes Bennettii*, bred from the larva described at the last meeting; and a pair of *Heterogenea Asellus*, lately taken in the New Forest.

Mr. Stevens also exhibited larvæ of *Petasia nubeculosa* and *Notodonta Carmelita*, nearly full-fed, being the same as he exhibited at the last meeting, then a few days old; and a box of beautiful Lepidoptera, taken by Mr. Bates at Ega, containing *Papilio Bolivar* and some fine species of *Charaxes*, *Leptalis*, &c.

Mr. A. F. Sheppard exhibited *Gastropacha Illicifolia* from Cannoch Chase, and specimens of *Laverna Raschkiella* and *L. conturbatella* from Box Hill.

Mr. Adam White exhibited a box of insects, of various orders, taken by Mr. Bowring at Hong-Kong, Siam, &c., including a new species of *Monohammus*, of a fine bluish green colour, with black spots, for which Mr. White proposed the name of *M. Bowringii*; also a new butterfly, of the singular genus *Cyrestis*, from Siam, and some curious spiders from Java, &c.

Mr. Bowring exhibited the larva of a Chinese *Elater*, and the pupa-cases of *Sagra femorata*, apparently formed of excrement. He made the following communication respecting the *Sagra* and the *Monohammus*:—

“The pupa-cases of *Sagra*, now exhibited, were discovered by Lieut.-Col. Dunlop, R.A., in the interior of the stem of a large climbing species of *Ipomæa*, which trails over a fine row of bamboos in the rear of Head-Quarters House. In clearing away the creeper he observed that the stem was considerably thickened in some places; and on cutting open the swellings the pupæ were found. The larva I have not yet met with;

but, being now acquainted with the habitat of the insect, I have little doubt of falling in with it on my return to China.

"The beautiful species of *Monohammus*, to which Mr. White has called the attention of the members present, is found upon a species of oak not uncommon in Hong-Kong; but the species is by no means of frequent occurrence. I first met with it in 1848, since which time, until the spring of the present year, I have found it only during one season. On each occasion the appearance of the insect was limited to a few days, and every specimen captured was taken on the oak already mentioned.

"During the summer of 1855 *Agestrata chinensis* appeared in considerable abundance in the Happy Valley, Hong-Kong, flying in the evening about the tops of some large mango trees, and, from its great size, having more the appearance of a bat than an insect. In the mornings I not unfrequently found the beetle hanging on the under side of the leaves of the mango."

Mr. Westwood wished the interior of the cocoons of the *Sagra femorata* to be examined, to see if they contained the cast skins of the larvæ, in order to ascertain if the insect was provided with legs in the larva state.

Mr. Wilkinson exhibited a bred specimen of *Opadia funebrana* and the pupa-case; also several living specimens of a species of *Pyrophorus*, probably *P. noctilucus*, L., one of the fire-flies of the West Indies. On the meeting-room being rendered as dark as possible, the luminosity of these insects was observed with much interest by the members present. Mr. Wilkinson remarked that these specimens had been brought from Cuba *viâ* New York, but that their luminosity was not so great as on their first arrival in this country.

Mr. Baly exhibited specimens of eight species of *Cryptocephalus*, taken this season, including *C. nitens*, *C. Coryli*, and other rare species.

Mr. Westwood brought for distribution amongst the members the case-bearing larvæ of *Porrectaria hemerobiella* and *P. laricella*. The latter species had done so much damage to a plantation of young larches this season that the owner feared he should have to cut the trees down. He also exhibited some empty pupa-cases of a *Tortrix*, apparently a species of *Sericoris*, found in curled-up leaves of wheat.

Mr. Westwood also exhibited a specimen of the imago and two cocoons of a species of *Saturnia*, sent to the Society of Arts from California, where attempts were being made to render the silk of the cocoons an article of commerce. He observed that these cocoons were flask-shaped, like those of our British species, *S. Carpini*,—a matter of great importance in a commercial point of view, for, the threads being all divided at the orifice formed for the exit of the perfect insect, it would, he conceived, be quite impossible to unwind the silk; and he therefore feared the speculation would prove a failure. He added that in the classification of the *Saturniæ* the structure of the cocoons had received less attention than it seems to deserve.

Dr. Gray said that at the Paris Exhibition, last year, there were exhibited cocoons of many species of *Saturniæ*, with specimens of silk produced from them. It appeared the cocoons were in the first place perfectly flat, and then subjected to a spinning process.

Mr. Buxton sent for exhibition specimens of *Scopula decrepitalis*, taken by him, last month, in Ross-shire; also singular varieties of *Orthosia gothica*, from the same locality. In these specimens the conspicuous dark marks usually surrounding the stigmata in this species were quite obsolete.

Dr. Calvert exhibited larvæ of *Caradrina Cubicularis*, which species had been

described by Mr. Curtis in the 'Agricultural Journal' as injurious to wheat crops. He had found it very injurious to grasses, especially the *Festucæ*, although one species, *F. loliacea*, did not appear to be attacked by it.

Mr. Adam White observed it was a curious fact that the larvæ would not attack *F. loliacea*, as this grass was considered by eminent botanists as a mere variety, and not a distinct species.

Mr. Stainton read a paper entitled 'On the Recent Progress of Micro-Lepidoptero-logy on the Continent.'

Society's 'Transactions.'

Part 1 of Vol. iv. N. S. of the 'Transactions,' was on the table.

August 4, 1856.—J. O. WESTWOOD, Esq., Vice-President, in the chair.

Donations.

The following donations were announced, and thanks ordered to be given to the donors:—'A Manual of British Butterflies and Moths,' No. 6; 'The Entomologist's Weekly Intelligencer,' Nos. 15, 16, 17 and 18; presented by H. T. Stainton, Esq. 'Genus Familiæ Apidarum Heriades, quod Synopsi Monographica exponit,' by the author, Dr. W. Nylander. 'Proceedings of the Royal Society,' Vol. viii. No. 21; by the Society. 'The Zoologist' for August; by the Editor. 'The Natural-History Review' for July; by the Editors. 'Revue et Magasin de Zoologie,' No. 6; by the Editor. 'Eine neue Oesterreichische Phryganea' and 'Eine neue mähelische Nycteribia; by the Author, Dr. Kolenati. 'Journal of the Society of Arts' for July; by the Society. 'The Literary Gazette' for July; by the Editor. 'The Athenæum' for July; by the Editor. 'Report of the Committee on the "Cane-borer;"' by the Author, Prof. Bojer.

Election of a Subscriber.

John Sang, Esq., High Row, Darlington, was balloted for and elected a Subscriber to the Society.

Exhibitions.

Mr. Douglas exhibited, on behalf of Mr. Bold, a specimen of *Drepana Sicula*, taken at Leigh Wood, near Bristol, in June last: there had previously only been one known British specimen, taken in the same locality many years since by Mr. Mitford, and now in the collection of the Rev. H. Burney.

Mr. Hunter exhibited *Spilodes palealis* and *Trochilium Chrysidiforme*, taken near Folkestone in July last; also a specimen of *Eriopus Latreillii*, a *Noctua* new to Britain, which he had recently bred from a larva believed to have been taken at Black Park, and specimens of the summer brood of *Ennomos illustraria*, bred from eggs laid by the vernal female.

Mr. Weir exhibited some specimens of *Macaria notataria*, in all of which the under wings were more or less imperfectly developed, to which malformation he had noticed

this species was particularly subject, especially this season; one specimen, in which the under wings were merely rudimentary, flew with as much apparent ease as those in which they were perfectly developed.

Mr. S. Stevens exhibited *Harpalyce Galiata*, in which one under wing was quite wanting. Mr. Bond observed that such malformation was not at all uncommon among the *Geometridæ*. Mr. Smith remarked that in the female of the common wasp the wings were frequently not developed at all.

Mr. Stevens exhibited two specimens of *Deilephila Galii*, bred from larvæ taken last autumn by Mr. Smith near Deal, and some *Tortrices* resembling female varieties of *Lozotænia Viburnana*, which he believed might prove a distinct species; also four specimens of *Trochilium Chrysidiforme* and a specimen of a new British species of *Phycidæ*, probably *Nyctegretes achatinella*, taken in July near Folkestone.

Mr. Waterhouse exhibited some specimens of *Myrmedonia*, which he had found in the vicinity of a nest of the black ant (*Formica fuliginosa*), at Brockenhurst, in the New Forest: they consisted of *Myrmedonia funesta*, *M. lugens*, *M. humeralis*, *M. cognata* (?), and *M. laticollis*. Of these all the species furnished but few specimens, excepting the *M. laticollis*, which was plentiful. Mr. W. further stated that of these species three (*M. cognata*, *M. laticollis* and *M. lugens*), he believed, had not found a place in the list of British *Coleoptera*, but that the *M. cognata* had been previously discovered by Mr. Janson. One other new British species of *Staphylinidæ* was exhibited by Mr. W., viz. the *Oxypoda vittata*: it was found in company with the species of *Myrmedonia* above noticed.

Mr. Tompkins exhibited a specimen of the *Nyctegretes*? previously exhibited by Mr. Stevens, which he had taken at the same time and place, on the *Echium vulgare*.

Mr. Bond exhibited six beautiful specimens of *Graphiphora ditrapezium*, taken near Blandford, Dorsetshire, about the middle of July.

Mr. Wollaston exhibited some *Coleoptera* recently taken in Leicestershire, including a single specimen of *Scraptia fusca*.

Poison with Laurel Leaves.

Under this title, the Secretary read the following note from Mr. Newman:—

“ I have two favourite theories with regard to insect-killing: *first*, that man, not being constructed on the same plan as an insect, has very little chance of judging correctly as to the extent or quality of its sufferings under any circumstances: *secondly*, that man has no right whatever to inflict unnecessary suffering on any creature, and may not assume that sensation exists not because he perceives it not. Entertaining these views, I have watched with much interest the effects of laurel-leaf poison on divers insects subjected to its agency: these are very similar in all insects; a state of coma is speedily induced, and this gradually assumes the phase of peaceful unsuffering death. I will try to pourtray the scene in the instance of a perfectly vigorous female of *Arge Galathea*. Immediately on being placed beneath the inverted tumbler, it settled on the gauze covering of the bruised laurel-leaves, and walked about very sedately, occasionally opening and shutting its wings, as if under the influence of genial sunshine. It soon ceased walking, but the wings still moved occasionally; and the convolute maxillæ were unrolled, and their tip seemed to be feeling about in search of food: presently the said tip was immersed in a drop of fluid exuding from a

recent wound in the laurel stem; a very small quantity was imbibed, and more was sought very assiduously, but seemingly without success. I once observed the first pair of legs porrected, and being held close together, the maxillæ were introduced between them and withdrawn several times in succession: this was very new to me, as I do not recollect having before seen the fore-legs of a pseudo-tetrapod butterfly used for any purpose whatever: in this case they appeared as cleansing instruments, and reminded me a little of the velvet-cushioned paws of a cat, as used after her lips had been sprinkled with milk, a constant result of lapping that favourite beverage. A state of rest succeeded this cleansing, during which the butterfly inclined on one side, as though unable to maintain an erect position; and the angle of inclination increased very gradually, until in about an hour and a half the insect fell on its side; the slight shock of the fall was followed by a few gentle movements, the most notable of these being the reversal of the wings, the under sides of which were brought into approximation, not contact, beneath the body; the legs being, by the same movement, quite deprived of their *locus standi*. Life was extinct, and from first to last there had not been the slightest indication of suffering. I do not theorise as to the immediate cause of death: I do not assert that, because the insect sipped the laurel-juice, it committed either intentionally or unintentionally an act of *felo-de-se*: the very atmosphere of a tumbler inverted on bruised laurel is impregnated with deadly poison in a gaseous state, and this enters the system through the spiracles as readily as a liquid through the conjoined maxillæ."

Mr. Smith always found the bruised laurel-leaves killed Hymenoptera very speedily. He could not agree with Mr. Newman, that, in the case of the butterfly alluded to, the process which took an hour and a half to destroy life was not attended with suffering.

Mr. Douglas said that a short time since he had placed a number of Coleoptera, amongst which was a specimen of *Necrobia ruficollis*, in a bottle containing bruised laurel-leaves: after a lapse of several days he had found the *Necrobia* still alive.

Mr. Weir remarked that *Eupisteria hepararia* seemed less affected by the laurel poison than any other Lepidoptera he had observed.

Mr. Hudson found the fumes of the bruised laurel-leaves very powerful for the first day or two, but the strength was gradually lost.

Mr. Walker had found the laurel-leaves much more powerful in hot than in cold weather.

Mr. Douglas remarked on the immense numbers of small insects, especially Coleoptera, lately seen on the wing at sunset, which he attributed to the great heat and stillness of the atmosphere.

Mr. Stevens had noticed this circumstance in previous years during very hot and dry weather.

Mr. Westwood called attention to Dr. Schaum's continuation of the late Dr. Erichson's '*Naturgeschichte Deutschlands*,' which had just been placed in his hands by Mr. Wollaston, and adverted to the fact that the *Cicindelidæ* had in it again been raised to the rank of a family.—*E. S.*

Notice of the Occurrence in Cornwall of that rare Zoophyte, Retepora reticulata.—

As you always think it desirable to notice the occurrence of any of the rarer objects of Natural History in the pages of the 'Zoologist,' I send for insertion a description of a specimen of *Retepora reticulata*, which I recently procured from deep water off the Scilly Islands. I can speak with certainty as to its great rarity in Cornish waters; and, judging from the very brief and imperfect description of it given by Johnston in his 'British Zoophytes,' I conclude it is equally rare in other parts of the kingdom, or that it but rarely falls to the lot of a naturalist to examine. It was first noticed as British by Borlase, and he has figured it in his 'Natural History of Cornwall;' by him it was communicated to Ellis, who published a figure and short description in his 'Essay on Corallines,' about three years before Borlase. Since that time I believe no other Cornish specimen has been obtained till now. My specimen was hooked up in fifty fathoms water, growing to a boulder of rounded slate, in company with *Tubulipora patina* and *T. serpens*. It is about three-quarters of an inch in height and width, and about one inch in its longest diameter. It is calcareous, white, foliaceous, shortly pedunculated and funnel-shaped; the polypidom is pierced with numerous oval openings quincuncially arranged, having their longest diameter in the axis of growth. The cells are confined to the upper surface only. It is a very light and very pretty species, and in its dead state is of a pure white colour. The peduncle is rather small, and is attached by a slightly spreading base. As it rises from the base it immediately spreads out into its waved foliaceous expansions, assuming a funnel-shaped form, with the free margin very unequal and much convoluted. The oval openings, which everywhere perforate the polypidom, are produced as the natural result of the peculiarities which characterize the mode of branching. As the calcareous parts ascend from the peduncle, the branches, which are short, arise in pairs and diverge from each other. This diverging brings two neighbouring branches into contact, and they then unite, leaving an open oval space between. The cells, which are confined exclusively to the upper surface, are long, tubular and immersed throughout their whole extent, except near the oral apertures, where they are more or less free and semi-erect. The apertures of the cells are round and armed with one or two stout spines, which give the surface of the coral, when viewed laterally, a rough appearance. The cells are arranged on the branches either quincuncially or in twos and threes in oblique lines across. The under-surface of the polypidom is plain, being marked only by lines which indicate the course of the cells above. The specimen examined so closely resembles the figure given by Borlase that no doubt can be entertained but that both must be referred to the same species; but I am inclined to think a little confusion exists in authors respecting this and a kindred species, which perhaps it may be difficult to remove on the evidence of a single specimen, though I have had an opportunity of comparing it with *R. Beaniana*, which it most resembles. The synonyms which appear to belong to this species, so far as I have yet examined, are—

Retepora eschara marina. Ellis' Coral. p. 72, pl. xxv. fig. d, D.

Millepora retepora. Borlase, Nat. Hist. Corn. p. 240, pl. xxiv. fig. viii.

„ *reticulata*. Lin. Syst. Nat. 1284; Ellis and Soland. Zoop. p. 138.

Retepora reticulata. Flem. Brit. An.; Stark's Elem. vol. ii. p. 435; Stewart's Elem.; Couch's Fauna, p. 130, pt. 3; Johnst. Brit. Zoop. p. 353.

Dr. Johnston has quoted, at p. 353 of his valuable work on 'British Zoophytes,' Mr. King's remarks on *R. Beaniana*, in which he says, "In the Mediterranean coral

the interstices of the celliferous surface are furnished with strong hook-shaped processes curving upwards, generally two on each side of a mesh;" and he adds, "nothing of the kind is seen in the British species." This last is, however, a mistake, as the hooks are to be found on the side of almost every mesh in my specimen; but the hooks are nothing but the labial spines of the cells, which are thrown into distinct relief by the branches rounding off towards the oval interspaces. The spinous character of the mouth does not arise, as in *Discopora hispida*, from the unequal growth of the cell, but constitutes a distinct appendage, for the polypidom does not increase in thickness with age, as in some of the *Tubuliporidae*, but simply enlarges in its flat surface. In this respect its mode of growth resembles the encrusting *Flustras*.—*R. Q. Couch; Penzance.*

Occurrence of the Rosy Feather-star (Camarotula rosacea) and the Dotted Brittle-star (Ophiocoma punctata) at Banff.—I had heard a little, and had seen a plate or two, of the remarkable star-fish, the rosy feather-star, and had also seen something like it, if not the same, in stone; but it was not until a few days ago that I had the pleasure of beholding, for the first time, the real *bona fide* animal itself. What a pretty creature! but how brittle! O how beautiful! Does any one wonder, as I used to do, when he hears of a stone-lily or of a lily-star, as applied to this genus? Then let him get a sight of a crenard-star, and sure am I that his surprise will give place to admiration: and how curious! said to have been once the "most numerous of the ocean's inhabitants," and now only about a dozen kinds are to be found alive, and only one in the British seas, and that but rarely met with. Well, I am proud to be able to record its occurrence on the Banffshire coast. The specimen alluded to was taken from the stomach of a cod-fish (*Morrhua vulgaris*). I would beg also to mention the occurrence here of the dotted brittle-star: this is likewise a rare species with us; I have only as yet met with three, and that but lately, two from the stomach of a cod, and one from that of a haddock (*Morrhua aeglefinus*).—*Thomas Edward; Banff, August 8, 1856.*

Instance of a Honey Buzzard feeding on Blackbirds' Eggs.—Mr. Thurtell, bird-stuffer, of this town, informs me that he found the remains of blackbirds' eggs in the crop and stomach of a honey buzzard which he stuffed in the spring of 1854, and which was shot in a wood at Somerleyton, near this place. The circumstance being authentic is perhaps worth recording in the 'Zoologist.'—*J. H. Gurney; Lowestoft, August 16, 1856.*

Extraordinary Effect of Sudden Cold on Swifts.—On Tuesday, the 8th of July, I was at Deal: the early part of the day was warm, but a continued drizzling rain fell; this, however, did not prevent swallows and swifts from hunting after their prey much as usual: towards evening a sudden atmospheric change took place, the thermometer fell rapidly; it became so cold that an overcoat was not uncomfortable. Sitting at the window, and amusing myself by watching the swifts, which were very numerous, I was struck by observing that their flight was unsteady; they fluttered up against the walls of houses, and I saw several even fly into open windows. Whilst observing these occurrences a girl came to the door to ask me if I wanted to buy a

bat: she had heard, she told me, that I bought all kinds of bugs, and her mother thought I might want a bat. On her producing it, I was astonished to find it was a poor benumbed swift. The girl told me they were dropping down in the streets, and the boys were killing all the bats; the church, she said, was covered with them. Off I started to witness this strange sight and slaughter. True enough; the children were charging them everywhere, and on arriving at the church in Lower Street I was astonished to see the poor birds hanging in clusters from the eaves and cornices; some clusters were at least two feet in length, and at intervals benumbed individuals dropped from the outside of the clusters. Many hundreds of the poor birds fell victims to the ruthless ignorance of the children.—*Frederick Smith; British Museum, August 16, 1856.*

Particulars of some of the Habits of the Dipper (Cinclus aquaticus).—As the dipper, or water-thrush, is commonly found to confine itself to solitary places, far from the busy hum of men, it is not easy to imagine a reason why it should at any time so far forget its accustomed shyness as to take up its residence and rear its brood very close to, and almost in the midst of, a rather considerable cluster of houses, the residence of about a thousand inhabitants. Such a circumstance, however, has happened; and has afforded me the opportunity of recording the following notes of the proceedings of a pair of these birds under such novel circumstances. For a year or two before the date to which I particularly refer, these birds were observed to be frequently at lower stations than usual on our small but rapid trout stream, that runs through the town; and in each instance they reared their young in safety. After this I received information that a nest had been formed on the bank of the river, in a situation where I should least have supposed, and I proceeded to examine it. I found it on a large stone overhanging the only depth into which, for a long distance, the birds could plunge immediately from the nest and be covered with the water. It was formed of moss, but the bottom was the bare stone; and much skill had been employed to remove suspicion, by causing the straggling brambles to grow over it, and even by scattering, and interweaving with the structure, some dead pieces of the stems of the bramble. The young had escaped, and in doing so had been observed to shuffle themselves over the border of the stone into the water below, into which they sunk as they scrambled away from sight. It appears surprising how these birds could have come to this nest at any time without being discovered by boys, who swarm in the neighbourhood, and whose prying eyes might have been supposed to have soon traced out their retreat, however well concealed by overhanging bushes. To approach the nest, perhaps indeed, sufficient vigilance might be employed, by watching the occasion when these boys were engaged elsewhere; but to quit the place unobserved must have been attended with considerable difficulty. My informant was aware of this, and kept watch accordingly, and as he is one of those persons, so often found in the country and so useful to a naturalist, who is fond of observing Nature, with a true eye to discern circumstances, I have no hesitation in adopting his narrative, to secure the accuracy of which no time or attention was thought too much. When the bird left its station, instead of flying along the brook, it was observed to rise perpendicularly to almost the height of the hills close by, and consequently to the elevation of about three hundred feet, and from thence it either flew away at an angle or descended in a sloping flight to some other part of the Coomb. Its entrance to the nest was probably secured in a different manner; but it is scarcely possible to think of a measure better calculated than the former to effect

the object without attracting observation. The observer informs me that, early one morning in August, his attention was excited by one of the birds, as it was engaged in catching young eels that, as is usual, were ascending the stream. One of its wings was stretched out in the flowing of the river, so as, in some degree, to form a breakwater in the shallow. An eddy was thus created, and when an eel swam forward to the slack water, the bird immediately seized and swallowed it. This action was observed on several occasions in different parts of the stream, the wing being extended against the course of the current in every case. It has been remarked that the dipper and the kingfisher do not keep in the same streams, but which it is that drives the other away seems uncertain.—*Jonathan Couch; Polperro.*

Occurrence of the Rosecoloured Pastor at York.—I beg to inform you that a fine specimen of the rosecoloured pastor (*Pastor roseus*) was shot in a garden here on the 4th of this month, and is now in my possession: it is a female. The male has been seen several times, but I am sorry to say it is so wary that there is no coming within shot. I have also received a very fine old male bird of Montagu's harrier (*Falco cineraceus*), shot at or near Brompton, Northallerton, on the 14th instant.—*Daniel Graham; Market Street, York, August 16, 1856.*

The House Sparrow a Flycatcher.—July 31, 1856. A sultry day, with no air stirring, the thermometer at 6 P.M. up to 72°; just the sort of weather in which gnats and flies delight to sport, and the air seemed alive with small black flies, to which my attention was directed by observing some house sparrows hawking them, flying up some twenty or thirty feet, then soaring and balancing themselves with extended wings while seizing the insects, which they did seemingly as readily and expertly as the true flycatchers. After catching their prey they would suddenly drop to the ground, or fly on to the neighbouring roof or trees. One I observed proceed to feed its young, doubtless with one of the captured flies. Although I have occasionally seen sparrows take butterflies and other insects on the wing, I never before, that I am aware of, observed them regularly hawking flies after the manner of the flycatchers. I have for some years noticed the great partiality of the house sparrow for the leaf of the sea-purslane.—*Henry W. Hadfield; High Cliff, Ventnor, Isle of Wight, August 2, 1856.*

Gray Longbeak (Macrorhamphus griseus).—Extract from note-book:—"Isle of Man, 1847. When snipe-shooting in a marsh near the Point of Air, a bird suddenly rose before me, which I at first supposed to be a snipe, but, owing to its more rapid as well as peculiar flight, soon discovered my mistake. I fired, but it was out of shot almost before I could raise my gun to my shoulder. I again flushed it with no better success, but, having been careful in marking it down, proceeded to stalk it, taking advantage of any cover or inequality in the ground, with my gun ready to be brought to the shoulder, a finger on the trigger; so when sprung the *third time* I was fortunate enough to shoot it, but on picking it up saw at once that it was not a snipe. Although an old hand at snipe-shooting (having, in less than two seasons, killed eight hundred snipes out of this and the neighbouring marshes), I almost despaired of being able to bag it, from its great shyness as well as rapidity of flight. I consulted an old work on Ornithology, without finding it, but subsequently, on referring to Macgillivray's 'Manual,' met with a faithful description of it in the gray longbeak.—*Id.*

Occurrence of the Avocet near Newark.—An avocet was shot at Fisherton, on

the river Trent, near Newark, Notts, on the 23rd of July, 1856. As it is a young bird of this year, the interscapulars being brown instead of white, and the bill short, I should think it likely to have been bred in England.—*W. F. Footitt; Newark.*

Note on 'Manual of British Butterflies and Moths.'—There are two statements made in the August number of the 'Manual of British Butterflies,' one of which I am anxious to correct, and the other to modify. In reference to *Lithosia griseola*, it is said, "Larvæ unknown." This is quite an erroneous dictum: I have been in the habit of breeding it for some years past; I bred it at Halton, and in my present locality, during the spring, I found the larvæ by dozens: it bears a strong resemblance to that of the common complanula, but I will not attempt to give an accurate description of it, as, supposing it well known, I did not pay much attention to it. Like the majority of the species in this genus, it is a lichen-feeder, but it will not refuse leaves, as I have reared it from plantain, and Mr. Crewe told me he had bred it, I think, from beech. Secondly, of *Clostera curtula*, it is said, "This appears to have become a scarce insect." I am far from denying a statement in general which I can only disprove in particular, but I have long entertained an opinion similar to that expressed by, I think, Mr. Hodgkinson, in a former volume of the 'Zoologist,' that many insects esteemed rare are only so through ignorance of their habits and a want of steady and assiduous searching; but, as regards *C. curtula*, last autumn I took, or rather might have taken, the larvæ in profusion: ignorant of the circumstance that the insect was a desideratum, I secured only eighteen, from which I bred ten fine specimens. I trust I shall not be deemed presumptuous if I add that I think the scarcity of the insect may be owing, in part at least, to ignorance of the proper way of searching for the larva: many larvæ, as is well known, spin themselves up securely in a leaf, or between leaves, during the day-time, and come out to feed at night, as the different species of *Ceropacha*, *Tethea*, &c.; now it is almost, if not entirely, useless to beat for these; they can only be found by examining the leaves. Both *C. curtula* and *C. reclusa* spin up in this way: the right method, therefore, as it appears to me, to search for the larvæ, is carefully to examine the poplar shrubs and shoots which may be growing in open places or borders of woods; open every leaf which may be glued together, or, if two leaves be joined, disconnect them, and though many will be found empty or tenanted perhaps only by earwigs, yet, if the insect occur in the locality, it will be astonishing how much success will attend a few hours' careful search. Mr. Crewe is the best "hand" I know of at this kind of work, and to him I am indebted for much valuable information on the subject. I took the two species together, *C. reclusa* being the most abundant. Before I conclude, may I ask, Has not some error occurred in the same number of the 'Manual,' respecting *chrysorrhœa* and *auriflua*? The former I have been in the habit of supposing was the common gold-tailed moth, the latter the much more uncommon brown-tail, occurring principally on the coast.—*J. Greene; Playford, Ipswich, August 9, 1856.*

Reply to Mr. Gregson's Observations at p. 5210 of the 'Zoologist.'—I hope some one more competent than myself will reply to Mr. Gregson's paper in last month's 'Zoologist,' but should not like it to be supposed that he represents all Lancashire,

and, as I see my name mentioned, beg to say that I do not at all agree with him in the idea that Lancashire *entomologists* have done anything to entitle them to "brag" over others: we certainly work under some disadvantages, having neither a good library of reference nor an extensive general collection to refer to, and much time is lost in finding out what is already known, but he appears to have overlooked one or two considerations which would have reduced his claim considerably. The North of England was, a generation ago, almost unexplored for insects, and therefore sure to furnish novelties, and the finding of them does not necessarily imply extraordinary talents: Lancashire and the neighbouring counties contain, I imagine, more men who collect for sale than most other places, and as the great majority of these men care only to know how to get specimens, and what they will fetch in the market, they only merit the same praise as any other industrious producers of saleable articles; local insects are certainly "made common" by them in collections for a year or two, and scarce for a long time afterwards; but there is no scientific credit due for their discoveries: what merit there is at all in being accidentally the first to find a "new" insect I do not know. It appears to me also that, in some cases, Mr Gregson's zeal has led him to make over-statements, where other collectors have discovered the species, and his clients have followed them up and made them common, but, as I am away from books, if I particularise from memory, I shall perhaps only display my own ignorance. I should, however, like to know when *Daplidice*, *Fraxini* and some others were "doubted as British;" certainly not when the specimens he mentions were taken, for *Daplidice* was taken and bred at Dover many years ago, and my friend Edleston has had for many years a specimen of *Fraxini*, which was taken near Manchester, and both events are mentioned in the '*Entomologist*' or early numbers of the '*Zoologist*,' to which he refers; particular specimens were and are doubtful, especially sea-port ones, but not the species. If such papers as this, by exciting emulation, tend to advance the science, it is well; but if not, they can only gratify a petty vanity and excite ill feeling, and ought to be suppressed: let us all work as hard as we can in discovering the unknown in Entomology, and there is work for a hundred lives, and no necessity for jealousy from want of room, and any extraordinary talent or assiduity is sure eventually to be appreciated. I do not know why Mr. Stainton makes Lancashire collectors the chief whetstone for his wit: the last time he used us he compared us to Yankees, but quite misstated the character of our cousins, though they *do* talk they certainly do a considerable amount of work, and if the comparison be just, it is not uncomplimentary. Mr. Stainton continually ridicules collectors generally, because they do not know all that Continental entomologists have done, and do not find at once in Britain all the insects which may occur here, and especially those of which the habits are known abroad; he forgets that few entomologists are rich enough to possess a foreign library, and that most of us are too far away to avail ourselves of his liberality on a Wednesday evening; but, for all that I can hear or see, it is just as much a matter of luck with those who have these advantages as with us who have them not: example is proverbially better than precept, and a few insects found by mere force of *will* to do so, will be a better stimulant and rebuke to men of little determination than a whole '*Intelligencer*' full taunts and sarcasms.—*John S. Ashworth; Llangollen, August 15, 1856.*

Colias Edusa.—A single example, the first I have heard of this year, was noticed flying near Ryde on the 31st of July, a somewhat earlier date than usual for its appearance with us.—*A. G. More; Bembridge, Isle of Wight, August 15, 1856.*

Capture of Deilephila Galii in Sussex.—It may perhaps interest some of the readers of the 'Zoologist' to hear that on the 6th of this month I took a specimen of the "scarce-spotted hawk-moth" of Westwood's 'British Moths,' vol. i. p. 18. My attention was attracted by the loud humming caused by its wings, for it was too dark to see the insect; but I could just see that a flower of the Verbena was shaking, and swept it into my net. This was at half-past eight P.M. It was very violent, but succumbed instantly to a small piece of cyanide of potassa in a drop of vinegar. I add this, as it may be a useful hint to some of your collecting readers. I do not claim the discovery of the use of cyanide of potassa for destroying insects, the credit belonging to my friend G. B. Buckton, Esq.—*Wm. Borrer, Jun.; Cowfold, Sussex, August 11, 1856.*

On the Use of the Anal Fork in the Larva of the Puss-moth (Cerura vinula).—I have two caterpillars of the puss-moth, which have just passed through their last moult. One of these had moulted about ten hours, and had just begun to eat after the change, when I went into the room with a candle (as it was night) to look at him. I must premise that they were kept in a large, wide-mouthed glass jar, with a cover laid loosely on the top. The one I speak of had mounted on the edge of a large poplar leaf, and was so close to the top that in lifting off the cover I slightly touched his head. I was not looking at his tail at the moment; but, an instant after, I saw projecting from the extremity of each branch of this forked organ a crimson filament, as fine as a hair, but flexible and bent downward. When I first saw these filaments they were projected about one-sixth of an inch from the tail-tips, and were in process of being retracted into them, which in a few seconds was quite effected, no trace of their presence remaining visible, except that the extremities of the sheaths, when examined with a lens, were truncate and evidently perforate. It seemed as if the process was one of direct and simple withdrawal of the thread, and not of involution; but, from the tenuity of the filaments, I cannot be quite certain of this. The analogy of the organ, and of its mode of use, with the Y-shaped, orange-coloured, protrusile fork in the neck of caterpillars of the genus *Papilio* struck me at once. The throwing upward of the tail, as if to repel the affront, was exactly like what I have seen *Papilio* larvæ do with the head at the moment of extruding the fork. In the latter case, however, the organ is distinctly everted and inverted. I tried several times afterward to induce the puss to show fight again, coming suddenly upon him after intervals, and insulting him in various ways; but no: he remained obdurate.—*P. H. Gosse; August, 1856.*

Postscript.—I have since found that by tapping the glass jar with my finger-tips, or by taking out the leaf on which the caterpillar rests, in that uncouth fashion that was once upon a time considered lion-like, and laying it carelessly on a table, I can make him protrude his threads at pleasure. Sometimes only one filament appears, but much more commonly their motions are concurrent. The crimson filament, of about the thickness of a horse-hair, is shot forth rather suddenly, to the length of about three-eighths of an inch, from the tip of each of the tapering and mucicated anal processes. These are usually at the same moment thrown apart, and also jerked over the back towards the head. The filament bends downward as it protrudes; and when it has attained its utmost extension it begins instantly to be withdrawn, often curling up in an irregular spiral as it disappears. When watched with a lens the process is seen evidently to be one of eversion (for extension) and inversion (for withdrawal); the most basal portion (about a line in length) is of a greenish white hue,

and this is the first part to appear and the last to disappear; while as the lips of the extreme tip are seen to be, as it were, *sucked in*, just like the finger of a glove being turned, we discern the crimson colour of the inverted filament (through the semi-transparency of the integuments) pass in succession down this whitish portion, and then down the anal process, communicating (when finally at rest) a ruddy flush to the dorsal side of this organ, which, but for the contained filament, would be of a pale green studded with shining black spots. When the filament was extruded I touched it with my finger, to try if any odour was given off from it, but none at all was perceptible, either in the air or on my finger. The result would have been affirmation in both cases, if it had been a *Papilio* larva.—*P. H. G.*

Correction of an Error.—I have been from home two or three weeks. On looking over the 'Zoologist' to-day, I find an awful blunder: page 5206, line 19, "males" ought to be "females." Please correct this in your next number.—*R. S. Edleston.*

Notodonta camelina double-brooded.—There is an old proverb, "Look twice before you leap; and perhaps I had better think twice before calling in question the authority of such men as Mr. H. Doubleday and Mr. E. Shepherd; but the best of men are sometimes mistaken, and I think they are. At page 5165 of the 'Zoologist' I find both of them saying that the *Notodontæ* are not double-brooded; and Mr. Shepherd says, speaking of *N. ziczac*, *N. dromedarius*, *N. dictæa* and *N. dictæoides*, "I beg most distinctly to deny that they are double-brooded." Now *N. dictæa*, I beg most distinctly to assert, is double-brooded. With respect to the other three, I have not sufficiently observed their habits to say one way or the other; but, knowing a little of *N. dictæa*, I feel confident that what I say is correct, and in which opinion I feel assured I shall be backed by nearly, if not all, the Bristol collectors. We regularly look for the insect in May and the last week in July: at both times we take them in some plenty large and perfect; between those times we never take them. Now I wish to ask these gentlemen, How is it that, if *N. dictæa* be not double-brooded, we find them appear at two regularly stated times, and never between those times, if they are, as they say, uncertain in their appearance? Facts are stubborn things.—*Arthur Naish; Brooklyn Lodge, Ashley Hill, Bristol, August 11, 1856.*

Alteration of the name of Callimome flavipes: occurrence of Deiopeia pulchella in Exeter, &c.—Not being aware that the specific name of the new species of *Callimome* described by me in the 'Zoologist' (Zool. 5074), had been previously used for a species in the same genus, I therefore propose for it a new specific name, that is *Callimome Devonensis*, from the circumstance of the insect being first discovered in Devonshire. I went out the other day for an insect-hunt: the day was very fine, but an easterly wind was rather against us, which betimes blew rather cold; and now, as the entomological season is tolerably well advanced, I thought of obtaining something worth having. We rambled along by the side of the Creedy, a small river which empties itself into the Exe some little distance above Exeter: on its flowery and weedy banks I had thought to obtain a tolerably rich harvest, but was very much disappointed. *Cionus Scrophulariæ* was abundant in some plants of *Scrophularia aquatica*; we also obtained three species of *Donacia* on the leaves of the *Iris Pseudacorus*; but the best or rarest insect I saw for the day was *Deiopeia pulchella*, a single specimen, which I brushed out of the herbage by the side of the Crediton Railway, about half way between Crediton and Exeter, but by some unlucky aim I missed the mark, and lost it: this piece of misfortune unnerved me for the rest of the day, and I got nothing else worth mentioning, except a single specimen of *Lithosia rubricollis*.

I took two or three specimens of *Eucera longicornis*, which were almost the only bees I saw. On some old mossy rails I found one larva of *Coleophora paripennella*, and on a willow-leaf I met with a single larva of *Coleophora palliatella* sticking up in the upper part of the leaf in the midrib; after finding this one specimen I carefully hunted the bush over, but could not find another; this I was very sorry for, as it is a species that is much wanted: thus ended my entomological ramble, which you will say was a very poor one for a day in June in Devonshire.—*Edward Parfit*; 4, *Weirfield Place, St. Leonard's, Exeter, June, 1856.*

Note on the Occurrence of Scaptia nigricans.—I was fortunate enough to secure a specimen of this rare beetle a few weeks ago, near Kettering, in Northamptonshire, crawling on the inner surface of an open window, into which it had clearly flown from a garden immediately in front. The single example which had hitherto come beneath my notice was possessed by the late Mr. Stephens, and its history is, in the 'Illustrations of British Entomology,' thus briefly expressed:—"The only specimen I have seen of this insect I captured flying in a garden at Ripley, in July, 1827, about six o'clock in the afternoon." So much for *S. nigricans* the first. Its recent counterpart might be recorded as follows:—"The only specimen (save the Stephensian one) which I have seen of this insect I captured, flown out of a garden, at Rushton, in July, 1856, about six o'clock in the afternoon." An hereditary obedience to time and circumstances is strongly shadowed forth in many a representative of the "Carab race;" but the parallelism of these two instances is certainly very remarkable.—*T. Vernon Wollaston*; 10, *Hereford Street, Park Lane, August 7, 1856.*

Great Gathering of Phædon Vitellinæ.—On Wednesday, the 13th, at 6.30 P.M., the hour of Mr. Stainton's levée at the finger-post, I was wending my way quietly along a tributary lane in company with Mr. Douglas and some minor luminaries in entomological science, when I espied a twig of aspen, the leaves of which were so loaded with *Phædon Vitellinæ* as to give it a most abnormal brilliancy. One tap of the beating stick produced a shower of these living gems: the net was quickly studded with them no less than four hundred and eighty were bottled, and I believe full as many were turned adrift. Mr. Douglas and I have often thrashed the same hedges, in the same lane, at the same time, and with the same weapons, and I cannot recollect having seen a single *Phædon* previously taken there. This occasional abundance of a species in localities where it has not been observed before is a fact familiar to all experts in the craft; and many a record of such occurrences might be preserved with far greater advantage to science than those apocryphal statements about Bath Whites, &c., which we are occasionally treated.—*Edward Newman.*—[*Intelligencer.*]

Corrections of Errors in Communication to 'Zoologist,' page 5210.—Page 5210, 16 lines from top, for "complanula" read "complana"; 20 lines from top, for "Semaphora" read "Cerura"; 12 lines from bottom, put a full-point after the word "had" and a capital F to "found." Page 5212, 12 lines from top, erase "New Science"; 24 lines from top, for "ocellata" read "occulta"; 3 lines from bottom, for "my" read "any." Page 5213, 16 lines from bottom, after "rare" should read "have been taken," &c.; 12 lines from bottom, after "mixtana" say "and;" bottom line erase "*Heliothis dipsacea.*"—*C. S. Gregson*; *Stanley, near Liverpool, August 7, 1856.*

[Great pains were taken both by my friend Mr. Douglas and myself to correct Mr. Gregson's contribution, but we both were fearful that some errors escaped us. *E. N.*]

BRITISH GEODEPHAGA.

HAVING promised to contribute a Supplementary Paper on the
BRITISH GEODEPHAGA to the 'ENTOMOLOGIST'S ANNUAL FOR 1857,'
I shall feel obliged to any one who will communicate to me, by Letter, such instances
of the Capture of the more uncommon Species as may have fallen under his notice, and
any additional Localities (with dates) as can possibly be supplied.

J. F. DAWSON.

The Woodlands, Bedford,
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